Prediction of Seasonal to Inter-annual Hydro-climatology Including the Effects of Vegetation Dynamics and Topography over Large River Basins

Progress Report: Year 2

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Figures:

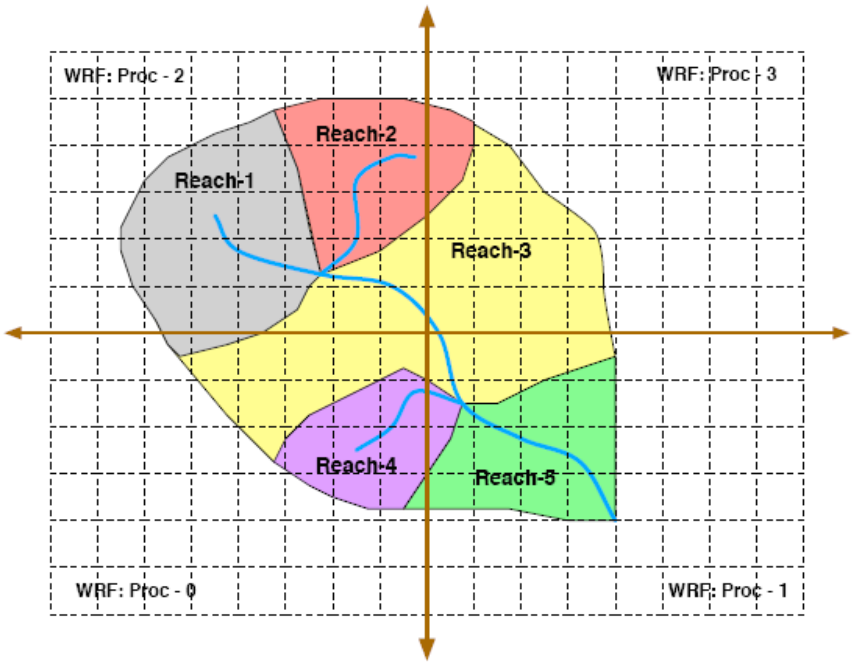

Figure 1: Domain decomposition for ptRIBS and the WRF model. The dashed square shows the grid cell for WRF. The brown vertical and horizontal lines show the domain decomposition of WRF for 4 processors. The watershed has 5 reach regions and ptRIBS decomposes the domain based on reach.

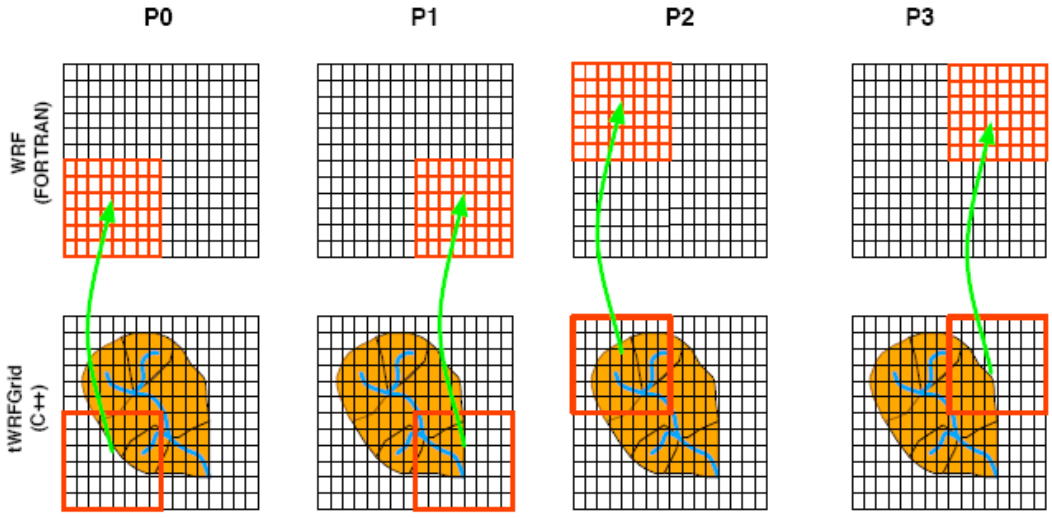

Figure 2: Communication of upscaled quantities from tRIBS back to WRF patch.

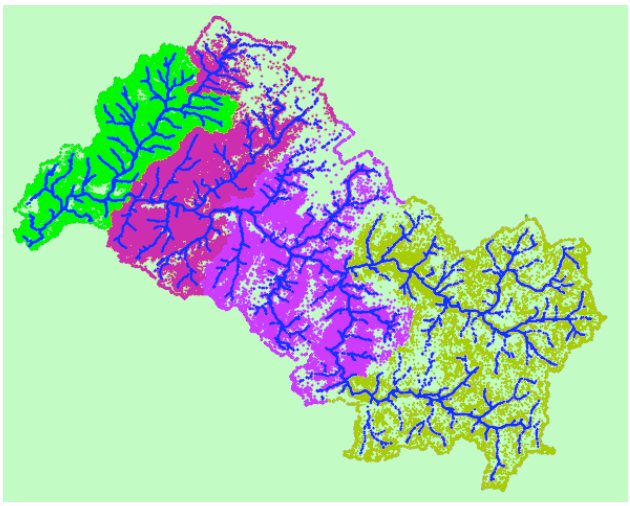

Figure 3: Baron Fork watershed, comprising of approximately 67000 computational nodes, distributed over 4 processors. The results of a distributed run and serial run are consistent.

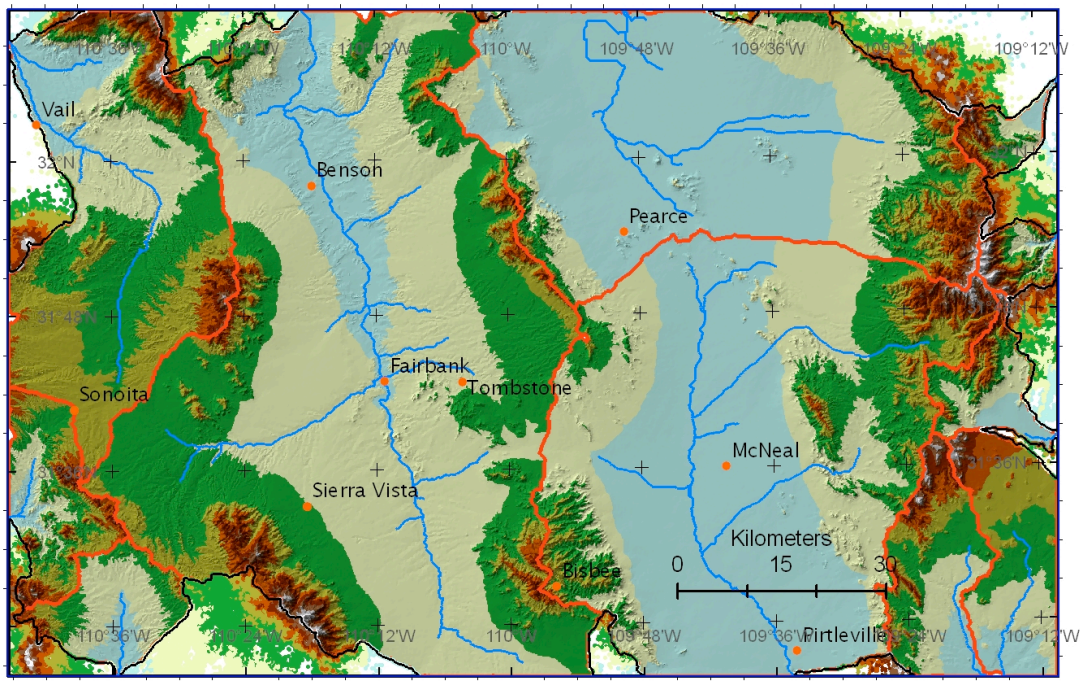

Figure 4: Watershed delineation over a large domain enclosing WGEW. Full watersheds with channel network and node connectivity are shown by red watershed boundaries and exterior watershed TINs which do not have nodes connected to a outlet are shown by black boundaries. The domain size is 150 km in the East West direction and 90 km in the North South direction.

Figure 5: Walnut Gulch Experimental Watershed topography is shown by the TIN in the figure above.

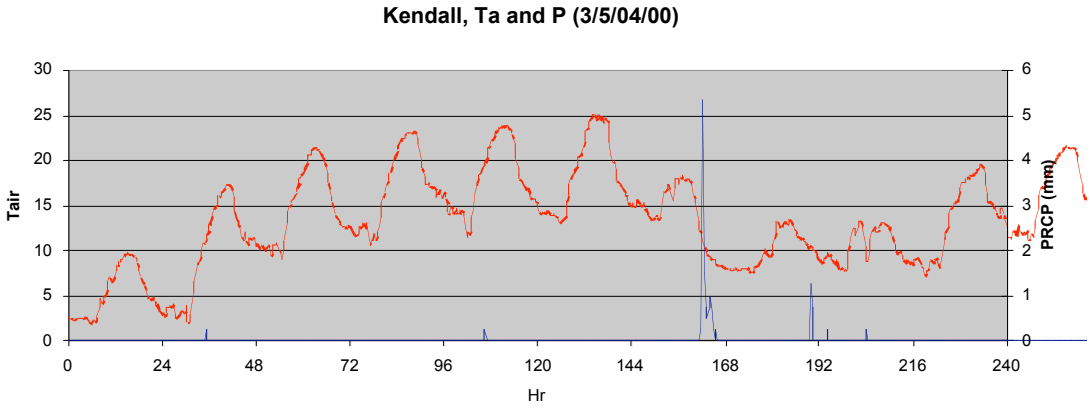

Figure 6: Air Temperature and Precipitation measurements for ten days at the Kendall site starting on 5th March, 2004, 12 am. The Kendall site is located in the upper part of WGEW (31.73N; 109.95W)

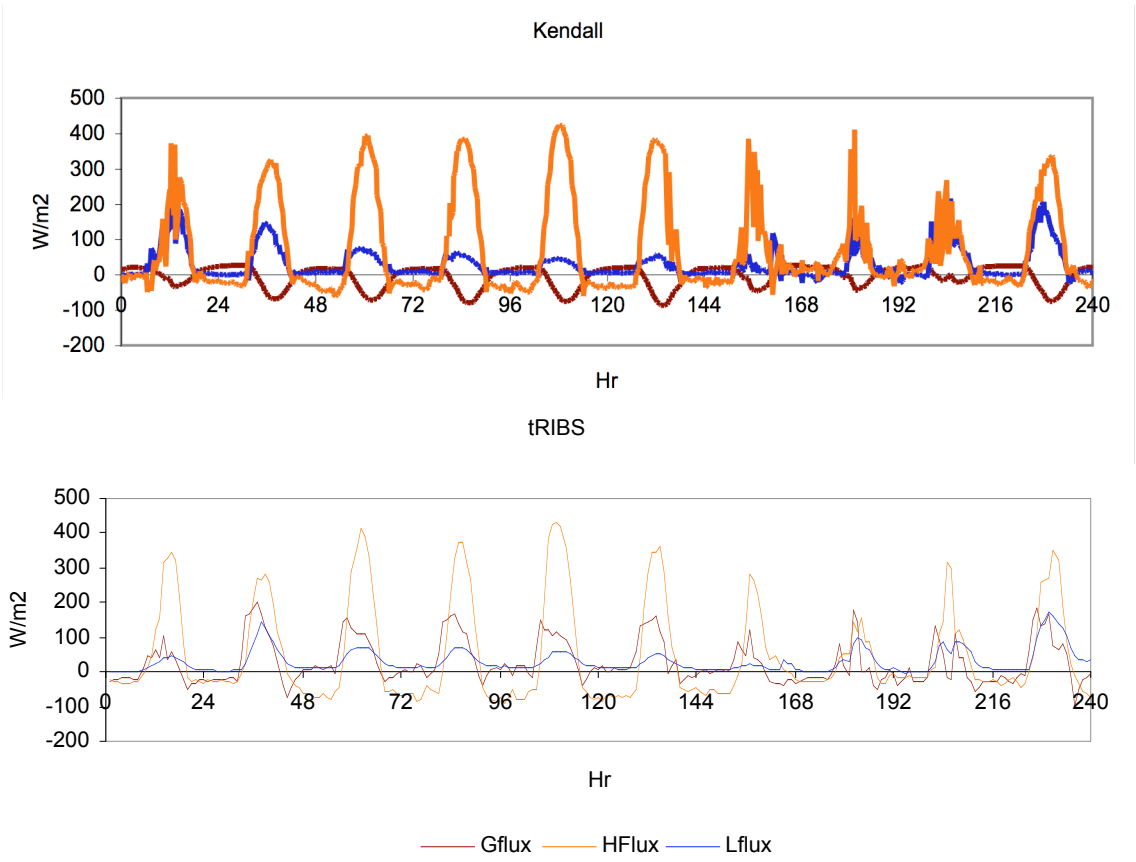

Figure 7: Ground, Sensible and Latent heat flux measurements at the Kendall site starting on 5th March, 2004, 12 am and tRIBS estimates for the same period obtained by driving tRIBS using atmospheric forcing data at WGEW. The Kendall site is located in the upper part of WGEW (31.73N; 109.95W)